



Application of Visagism Concept to Assess the Co-Relation between the Temperament and Smile Esthetics: A Clinical Study

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Study Protocol

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ABSTRACT

Background: Ability of a person to express a wide range of emotions with the movement of teeth and lips is called as a smile. Dentogenic concept considers gender, personality, age in harmonizing shapes of teeth with the face. Personality is unique for an individual. Unveiling personality traits, desires of the individual, translating them into natural tooth shapes to maintain the psychodentofacial harmony poses a major challenge to the clinician in designing a smile. Visagism is a novel concept that helps the dentists in providing restorations that involve esthetics psychological and social features of the created image, which influences the individual's emotions. It involves the customization of an image.

Aim and Objectives: To assess the co-relation between the smile esthetics and mental temperaments or personalities through the application of the concept of visagism.

Methodology: A Digital camera (DSLR) for capturing the photographs and smile designing software will be used. Each subject will be instructed to occlude the teeth while capturing

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photographs. A validated questionnaire study will be conducted that will help to discover temperament of the subject. The answers will be evaluated and maximum score of the responses out of the list will be dominant temperament in that individual.

Expected Outcome: Co-relation between this study might help clinicians to accurately assess the correlation between the temperament and the smile esthetics and eventually develop proper customisation of a smile with respect to the personality of the patient.

Conclusion: If computer-assisted smile design and application of visagism concept would be accurate and reproducible, this might help and improve the planning of smile designing, the oral rehabilitations.

Keywords: Visagism; psycho-dentofacial; temperament; smile esthetics.

1. INTRODUCTION

A smile is a person's ability to express a wide range of emotions with the movement and structure of the teeth and lips; it also determines how well a person functions in society. When a person has a harmonious smile [1,2] it is always assumed that it increases self-esteem and their ability to interact properly and more confidently in their surroundings.

Literature suggests that dento-facial esthetics can have a remarkable influence on a person's social and psychological [3,4] well-being and can affect their self-confidence and self-esteem.

Dentogenic concept [5,6], introduced by John P.Frush and Roland D.Fisher considers gender, personality, and age in harmonizing shapes of teeth with the face and the qualities of femininity, masculinity, personality is expected to reveal in the smile. Among all these parameters, personality is unique to an individual and the most challenging to determine.

Unveiling personality traits [7], desires of the individual and translating them into natural tooth shapes to maintain the psychodontofacial harmony poses a major challenge to the clinician in designing an esthetic smile. With the advances in dental materials and techniques, esthetic dentistry has been effective in restoring tooth function and form using a minimally invasive technique.

For a long time dentists have pursued to harmonize the teeth shape with whole face created on parameters like personality, gender, age but still truly successful results have been elusive. This concept helps dentists provide treatment that includes facial esthetics [8] and also psychosocial features, which affects the individual's behaviour, emotions and sense of identity.

Coming from French word visage, which means "face", Visagism was never quite defined until it was developed, expanded by the artist Philip Hallawell.

It revolves around a concept where a customized personal image is created that tell about a sense of identity of a person. The process used for application of this concept is taken from artistic visual language principles with disciplines such as sociology, anthropology, neurobiology or psychology.

This concept makes it conceivable to figure out which personality traits [8], emotions individuals wish to show through their smile.

Image provokes an immediate emotional reaction, as seen by many artists or researchers. When a person observes some image, the dentist provides treatment using this concept, it is evident that immediate emotional reaction occurs, accompanied by changes in posture, behavior and also phonetics [9].

Nonverbal communication which occurs in only a fraction of a second is the primary issue of study in Visagism. Due to availability of only a few studies in the literature regarding the concept of visagism, a need was felt to investigate whether it could be applicable. Limited information exists to date on the accuracy with which this concept is successful in customisation of smile esthetics.

1.1 Aim

To assess the co-relation between the smile esthetics and mental temperaments or personalities through the application of the concept of visagism.

1.2 Objectives

To assess

1. The correlation between tooth shape and the temperament of the person
2. The position of long axis of maxillary anterior teeth and the incisal angulation to the horizontal plane in each temperament
3. The configurative lines that unite the incisal embrasures, incisal plane, gingival zenith and gingival papillae in each temperament

2. MATERIALS AND METHODS

A Digital camera (DSLR, Canon1100D) will be used for capturing the photographs. The photographs and videos will be captured in the Department of Prosthodontics, Crown & Bridge SPDC, Wardha.

- Each subject will be asked to sit upright in a comfortable position. Photographs will be taken in day light following standard protocol.
- With a solid-dark background, extraoral and intraoral photographs will be taken. The photographs will be of frontal view with lips relaxed, frontal with smiling profile.
- While taking intraoral photographs of frontal view (in occlusion), right and left buccal in occlusion, proper cheek retractors, dental photography mirrors etc. will be used.
- The shot will be framed to cover the individual's neck and face with a substantial margin of space. The lens of the camera will be held when standing and at about 4-5 feet away from the individual.
- Frontal dynamic (smile) will also be taken. This picture will show the percentage of any excessive display of gingiva and the maxillary incisor display in smile.

2.1 Method to Evaluate Temperament

- A validated questionnaire study will be conducted that will help to discover temperament of the subject [10]. The participants will have to answer the questions very honestly and not acquired by effort and self-control.
- The answers will be calculated and the temperament scoring the maximum out of the answer's list will be dominant in that particular individual.
- There will be comparison of the subject's temperament with the results obtained.

Hippocrates classified personality into combination of these basic types of temperaments

- Choleric/strong temperament
- Sanguine/dynamic temperament
- Melancholic/sensitive temperament
- Phlegmatic/peaceful temperament

Study design-Observational study **Duration**- 2 years

Sample size- 100

2.2 Inclusion Criteria

- Female/male ages- 18 years -25 years
- Patients with facial symmetry and properly aligned natural teeth.
- Patients who are actively willing to participate in the study.

2.3 Exclusion Criteria

- Patient below 18 years of age.
- Patients having any orthodontic or fixed or removable prosthodontic treatment or anterior esthetic restorative treatment done have a history of any oral destructive habits.

3. EXPECTED RESULTS

This study might help clinicians accurately assess the correlation between the temperament and the smile esthetics and eventually develop proper customisation of a smile while keeping the patient's personality in mind.

The clinicians will be able to explain the patient as how his or her appearance is evoked by emotions and personality of the individual.

Individuals will be able to express their personality traits or emotions in harmony with their dentofacial esthetics.

4. DISCUSSION

Paolucci et al. (2012) determined the concept of visagism that aims to apply principles of visual art for customisation of smile. His study involved the interpretation of facial esthetics to govern the patient's mental temperament which more dominant in them. He concluded that to generate a smile design which expresses the individual's personality or lifestyle, there should be harmony

between physical appearance, attitude and patient's restorations [1].

Sharma et al(2015)conducted a study to find out if the Visagism concept is there in individuals. He designed a smile based study to customise the patient's smile with the attitudes and behaviour of the individual so that it makes it more life-like. Conclusion made was that a certain relation found between the parameters of a smile and temperament. It was deciphered from the study that form of the tooth was personality related [2].

Rambabu Tanikonda et al (2018) conducted a study to establish a relation between smile pattern and the personality traits through visagism concept(facial esthetics were determined by three parameters including maxillary anterior's long axes, tooth form and lines between embrasure. Although combining the basis of mental temperaments and smile design principles is an appreciable idea, a practical approach is lacking in creating a personalized smile for each patient at present stage [3].

Bansode Pradnya V et al (2019) in his study found that a definite relation was established between the different temperaments and the smile parameters. The parameter of form of the tooth in relation to the individual's personality was more definite [4]

Other related studies on esthetics and smile were reported by Pisulkar et. al.[11] and Sundrani et. al.[12].

5. CONCLUSION

If computer-assisted smile design and application of visagism concept would be accurate and reproducible, this might help and improve planning of smile designing, the oral rehabilitations etc.It will help the patients to analyze the basis of one's smile conveyance and on the personality traits they would like to put their emphasis on.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by

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CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and ethical approval will be collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Paolucci B, Calamita M, Coachman C, Gurel G, Shayder A, Hallawell P. Visagism: The art of dental composition. Quintessence Dent Technol. 2012;35:187.
2. Sharma A, Luthra R, Kaur P. A photographic study on Visagism. Indian Journal of Oral Sciences. 2015 Sep;6(3).
3. Rambabu T, Gayatri C, Sajjan GS, Varma PV, Srikanth V. Correlation between dentofacial esthetics and mental temperament: A clinical photographic analysis using visagism. Contemporary Clinical Dentistry. 2018 Jan;9(1):83.
4. Dr. Pradnya V. Bansode To find out correlation between the temperament and the parameters of a smile: A photographic study on visagism International Journal of Advance Research, Ideas and Innovations in Technology; 2019.
5. Frush JP, Fisher RD. Introduction to dentogenic restorations. J Prosthet Dent 1955;5:586-95.
6. Frush JP, Fisher RD. How dentogenic restorations interpret the sex factor. J Prosthet Dent 1956;6:160-72.
7. Frush JP, Fisher RD. How dentogenics interprets the personality factor. J Prosthet Dent 1956;6:441-9. [5] Frush JP, Fisher RD. The age factor in dentogenics. J Prosthet Dent 1957;7:5-13.
8. Bhat N, Mantri SS, Iliev GV, Qahtani FA, Godbole S, Mantri SP, Bal AS. First impression of teeth design on others: A facial and personality analysis in the Central Indian population. Nigerian journal of clinical practice. 2019 Nov 1;22(11):1503.
9. Shinde DM, Godbole SR, Dhamande MM, Dafade AR. Aesthetic Rehabilitation of Maxillary Anterior Teeth with Implant

- Supported Fixed Partial Prosthesis. Journal of Evolution of Medical and Dental Sciences. 2020 Oct 12;9(41): 3079-82.
10. John, O P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In Pervin LA & John OP (Eds.), Handbook of personality: Theory and research. New York: Guilford Press. 2:138.
 11. Pisulkar, S.K., R. Agrawal, V. Belkhode, S. Nimonkar, A. Borle, and S.R. Godbole. "Perception of Buccal Corridor Space on Smile Aesthetics among Specialty Dentist and Layperson." Journal of International Society of Preventive and Community Dentistry 2019;9(5): 499–504. Available:https://doi.org/10.4103/jispcd.JISPCD_2_19.
 12. Sundrani, Ayush, Ranjit H. Kamble, Monika M. Ahuja, Nitin Bhola, and Sunita Shrivastav. "Surgical Orthodontic Correction of Class II Malocclusion with Vertical Maxillary Excess and Gummy Smile- A Case Report." Journal of Evolution of Medical and Dental Sciences- Jemds. 2020;9(1)(January 6): 67–70. Available:<https://doi.org/10.14260/jemds/2020/15>.

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